

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicants: J.G. BEDNORZ ET AL. : Date: March 29, 1988  
Filed: 05/22/87 : Serial No.: 06/053,307  
Group Art Unit: 115 : Examiner: Dennis Albrecht

FOR: NEW SUPERCONDUCTIVE COMPOUNDS HAVING HIGH TRANSITION TEMPERATURE,  
AND METHODS FOR THEIR USE AND PREPARATION

DECLARATION OF CHENG-CHUNG JOHN CHI  
WITH RESPECT TO HIGH T<sub>C</sub> SUPERCONDUCTIVITY

Commissioner of Patents and Trademarks  
Washington, D. C. 20231

Sir:

I, Cheng-Chung John Chi, hereby declare and say the following:

1. I have a PhD in Physics which I received from the University of Pennsylvania in 1976. After graduation, I did Post-doctoral work at the University of California, Berkeley and then joined the Research Division of IBM Corporation in 1979. I am presently a research staff member on the technical staff of the Director of Research at the Thomas J. Watson Research Center of IBM Corporation located at Yorktown, New York.

2. At a time prior to approximately the middle of November, 1986, Chang C. Tsuei told me of measurements he made on samples of high T<sub>C</sub> superconducting material which he said were received from Georg Bednorz and K. A. Mueller, two physicists working for IBM Corporation in Zurich, Switzerland. These samples of superconducting material were La-Ba-Cu-O crystalline materials of the type described by Bednorz and Mueller in Z. Phys. B-Condensed Matter 64, pp. 189-193 (1986). Chang Tsuei said that he had measured resistivity versus temperature of these samples.

3. In the time frame mentioned hereinabove, Chang Tsuei showed me plots of resistivity versus temperature for the measurements he had made on these superconducting samples. I recall him telling me that the superconducting transition was "not really sharp", which is to

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be expected for samples prepared during the infancy of a technology development. I recognized that these plots were evidence of superconductivity with high  $T_c$ , even if the transition were not very sharp at that time. Based on Tsuei's statements to me, I believe that these resistivity versus temperature plots were shown to me within a day or two of the time Tsuei made these measurements in his laboratory.

4. All acts described by me in this declaration occurred in the United States.

5. I further declare that all statements made hereinabove are of my own knowledge and are true and that all statements made on information and belief are believed by me to be true. Further, I declare that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of a Patent Application or any patent issuing thereon.

Cheng-Chung John Chi  
CHENG-CHUNG JOHN CHI

DATE: 3/30/88